

**METHOD AND APPARATUS FOR MODULATING CELLULAR  
METABOLISM DURING POST-ISCHEMIA OR HEART FAILURE**

**Abstract**

5           A drug delivery system detects a cardiac condition indicative of a need for  
increasing a cardiac metabolic level and, in response, releases a drug into tissue or  
blood to shift a source of metabolically synthesized energy fueling cardiac contraction  
from fatty acid to glucose. One example of such a system includes an implantable  
device detecting an ischemia and a transdermal drug delivery device delivering a drug  
10 when an ischemic condition is detected. Another example of such a system includes  
one or more implantable devices detecting a predefined change in cardiac metabolic  
level and delivering a drug when the change is detected. Such systems are applied to  
treat, for example, patients suffering ischemia and/or heart failure and patients having  
suffered myocardial infarction.

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